

5. (Twice Amended) A method of deriving data relating to the presence and/or depth and/or concentration of any chromophore selected from the group consisting of: melanin, blood, haemoglobin, oxy-haemoglobin, bilirubin, tattoo pigments and dyestuffs, keratin, collagen and hair, which method comprises illuminating an area of such tissue sample by projecting light from a light source, receiving light remitted by the illuminated area of tissue at a photo-receptor, spectroscopically analyzing the remitted light, and comparing variations in the intensity and spectral characteristics of the remitted light with respect to the intensity and spectral characteristics of the projected light and with data representing a datum sample of intensity and spectral characteristics of light remitted by a sample of tissue of known structure.

35. (Twice Amended) Apparatus for monitoring the presence of one or more chromophores in a biological tissue sample, which apparatus comprises a light source for projecting light to illuminate an area of such tissue sample, a photo-receptor for receiving light remitted by the illuminated area of tissue, and a spectroscopic analyzer for monitoring the remitted light, a comparator for comparing variations in the intensity and spectral characteristics of the remitted light with respect to the intensity and spectral characteristics of the projected light at different wavelengths and with data representing a datum sample of intensity and spectral characteristics of light remitted by a reference sample of normal healthy tissue of known structure and a signal emitter for emitting a control signal in response to any such variations.

Cancel claims 37 and 38 without prejudice.

50. (Once Amended) Apparatus according to Claim 35, further comprising an endoscope for conducting light between said source, said tissue sample and said phot-receptor.

Please cancel claims 53-57 without prejudice.

66. (New) A method of non-invasive monitoring the presence of one or more chromophores in a sample of biological tissue, and controlling a treatment which involves the irradiation of a region of tissue with treatment light of predetermined spectral characteristics which method comprises  
illuminating an area of such tissue sample by projecting light from a light source, receiving light remitted by the illuminated area of tissue at a photo-receptor, spectroscopically analyzing the remitted light,  
and comparing variations in the intensity and spectral characteristics of the remitted light with respect to the intensity and spectral characteristics of the projected light and with data representing a datum sample of intensity and spectral characteristics of light remitted by a sample of tissue of known structure and wherein the absorption characteristics of tissue supervening the region to be treated for the treatment light are measured and used in calculating a required exposure of the tissue to the treatment light

67. (New) A method of non-invasive monitoring the presence of one or more chromophores in a sample of biological tissue and for predicting the outcome of a treatment which involves the irradiation of a region of tissue with treatment light of predetermined spectral characteristics, which method comprises  
illuminating an area of such tissue sample by projecting light from a light source, receiving light remitted by the illuminated area of tissue at a photo-receptor, spectroscopically analyzing the remitted light,  
and comparing variations in the intensity and spectral characteristics of the remitted light with respect to the intensity and spectral characteristics of the projected light and with data representing a datum sample of intensity and spectral characteristics of light remitted by a sample of tissue of known structure, wherein the absorption characteristics for the treatment light of the tissue region to be treated and of tissue supervening the region to be treated are measured and used in calculating a required therapeutically effective exposure of the tissue to the treatment light, and the required exposure and the absorption characteristics of the supervening tissue are used to predict potential destruction or scarring of the supervening tissue by such exposure.